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# Porting the G4GUO Modem to the Analog Devices 21xx DSP Processor

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# Motorola 56K EVM

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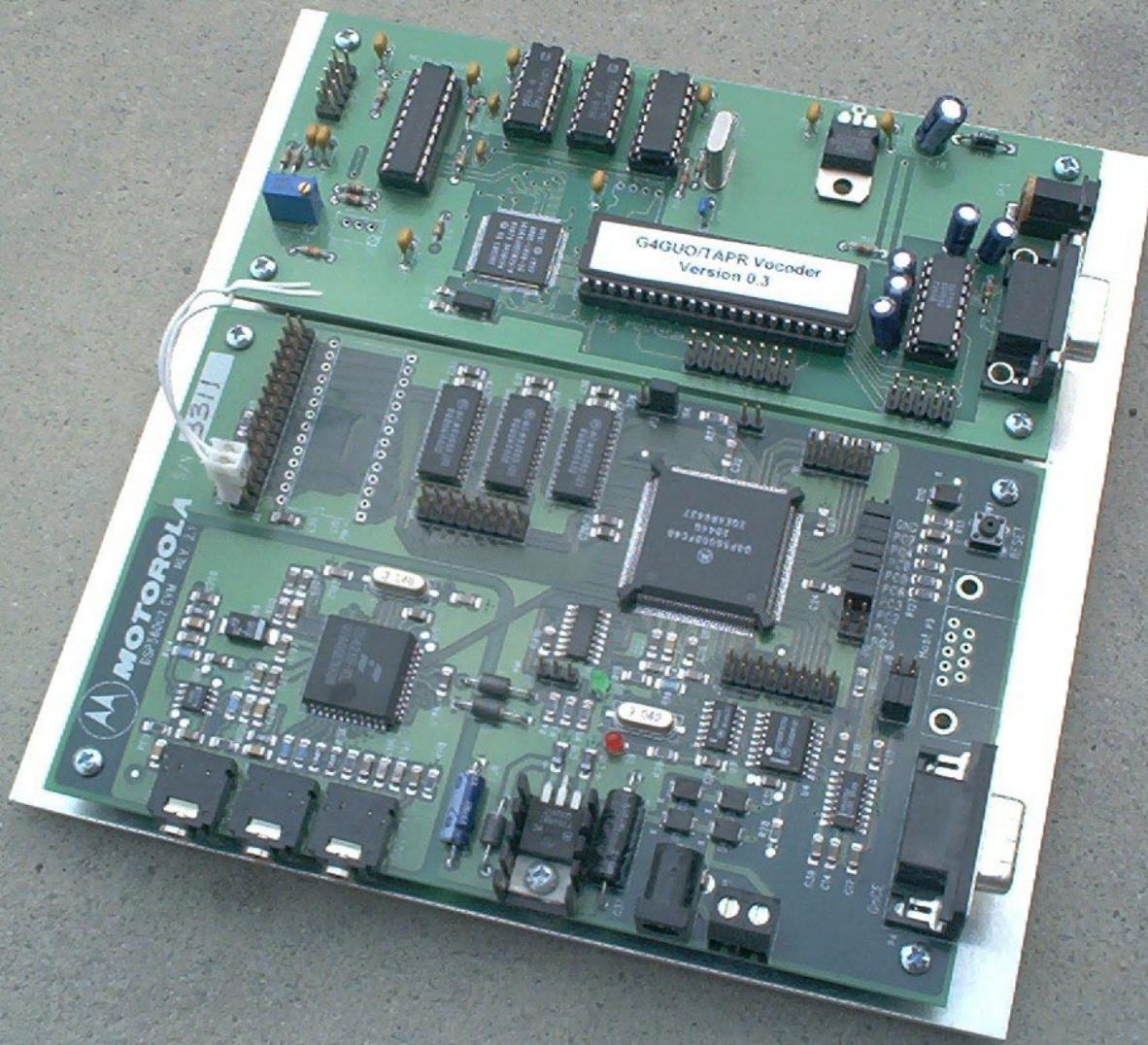
- Large program and data memory
- 32 bit data memory
- Built-in serial UART
- instructions allow indirection
- auto-increment registers

# Motorola's Bad News

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- Original EVM discontinued
- 56K parts can be expensive

# Motorola 56K EVM



# ADI 21xx Advantages

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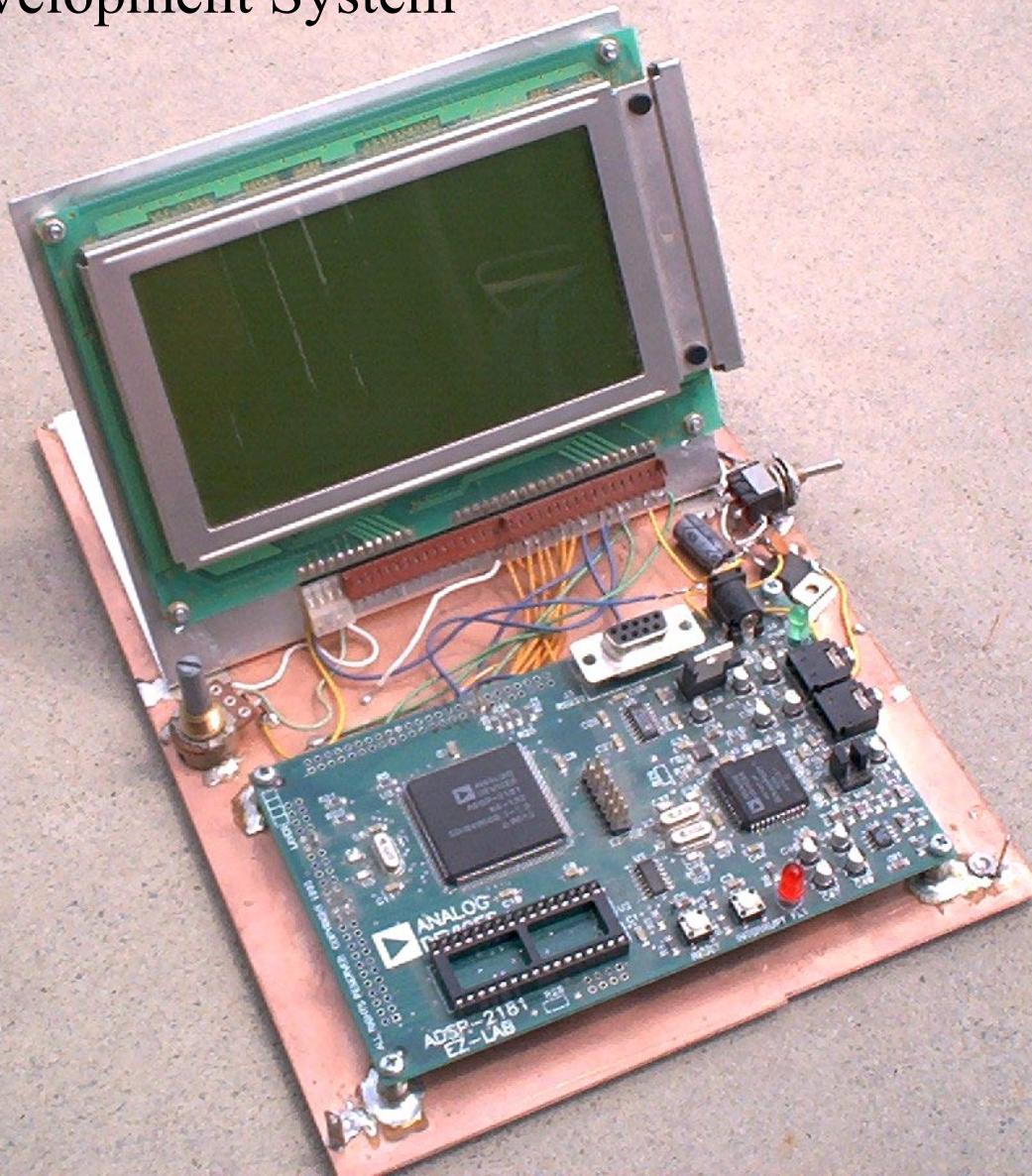
- Compact Architecture
- Easy hardware interfacing
- Low cost even in low volumes
- Easy to program

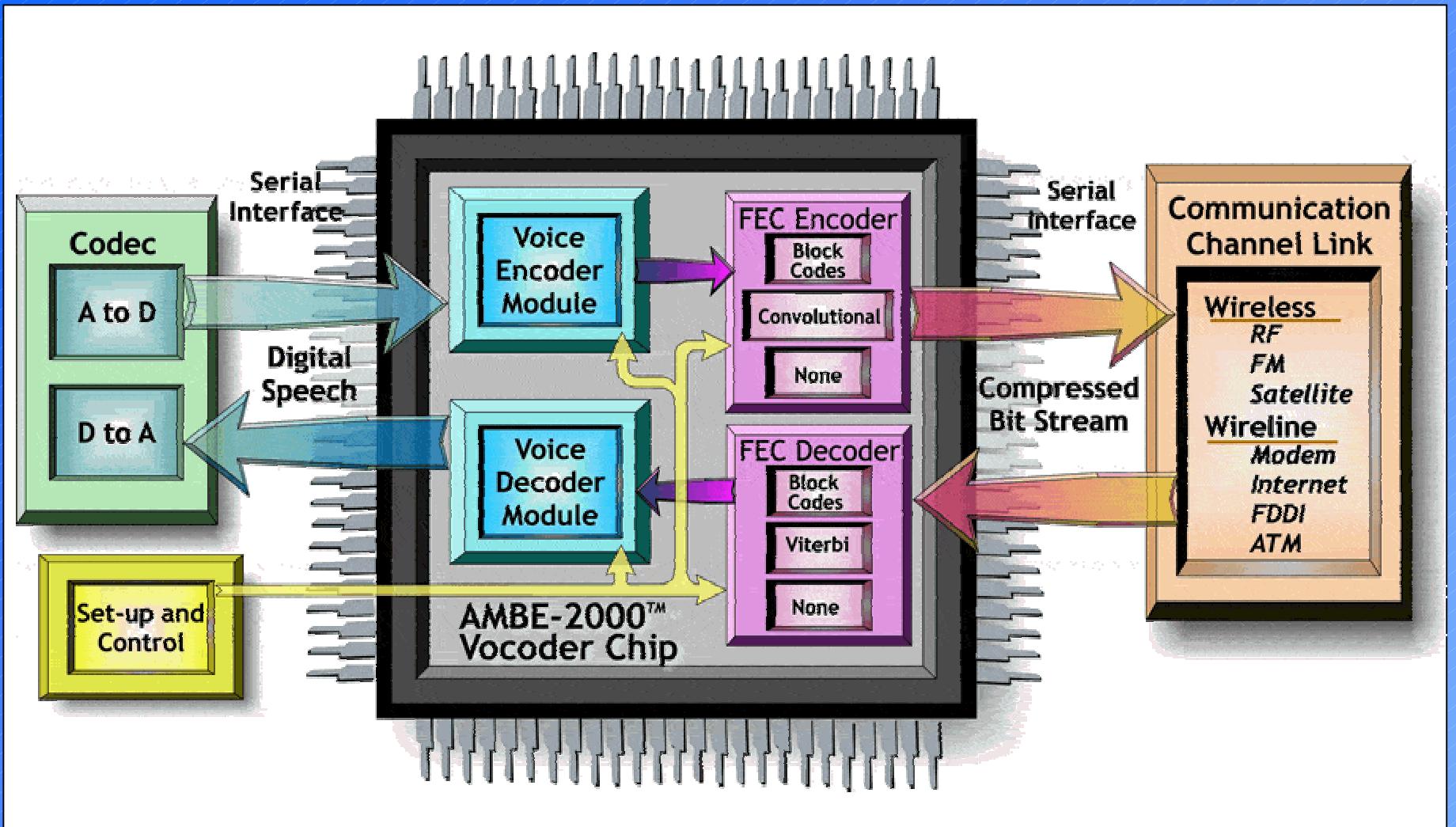
# ADI 21xx Bad News

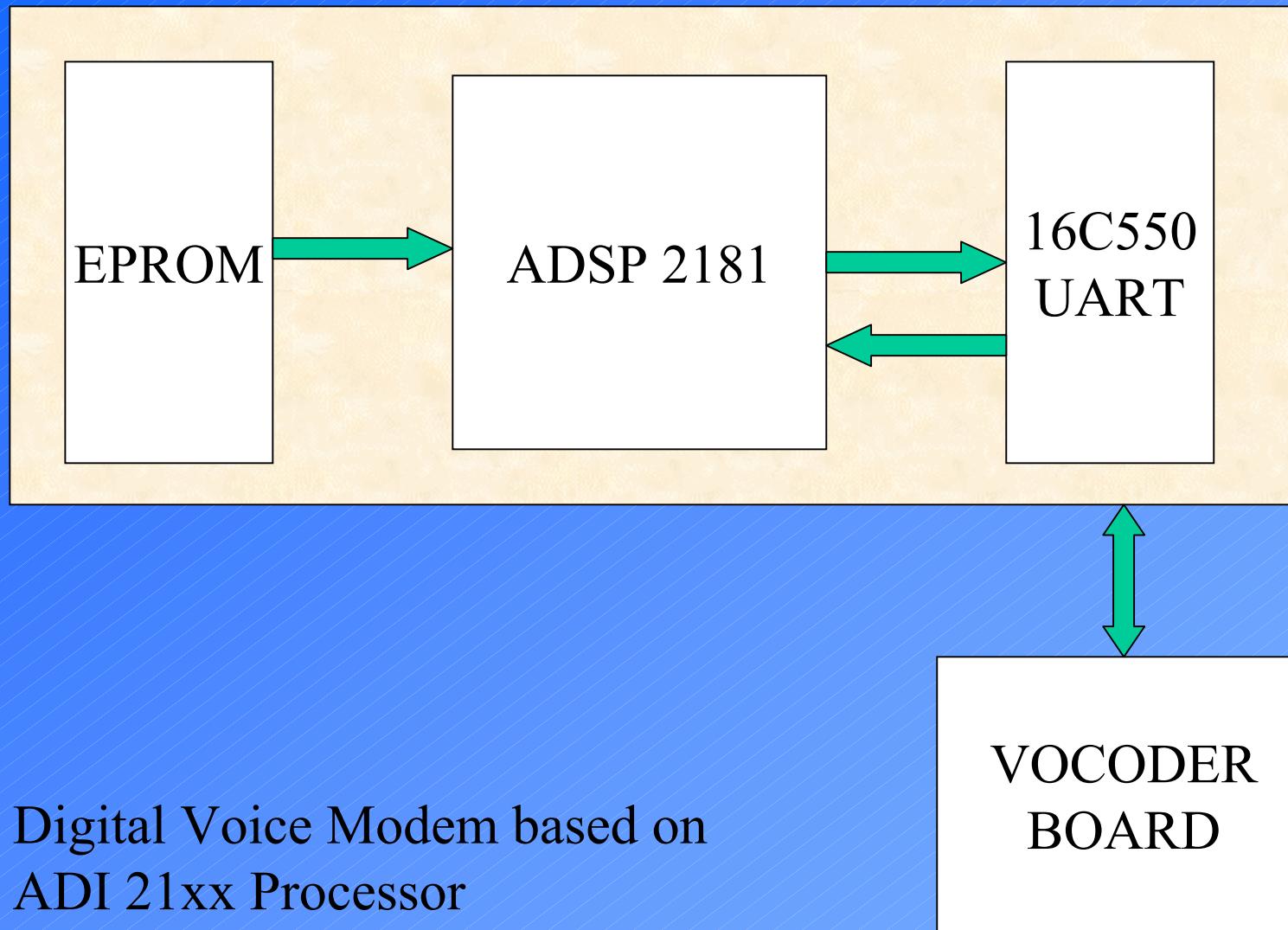
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- Small program and data memory
- 16 bit data memory
- No UART
- few instructions allow indirection
- limited number of DAG registers

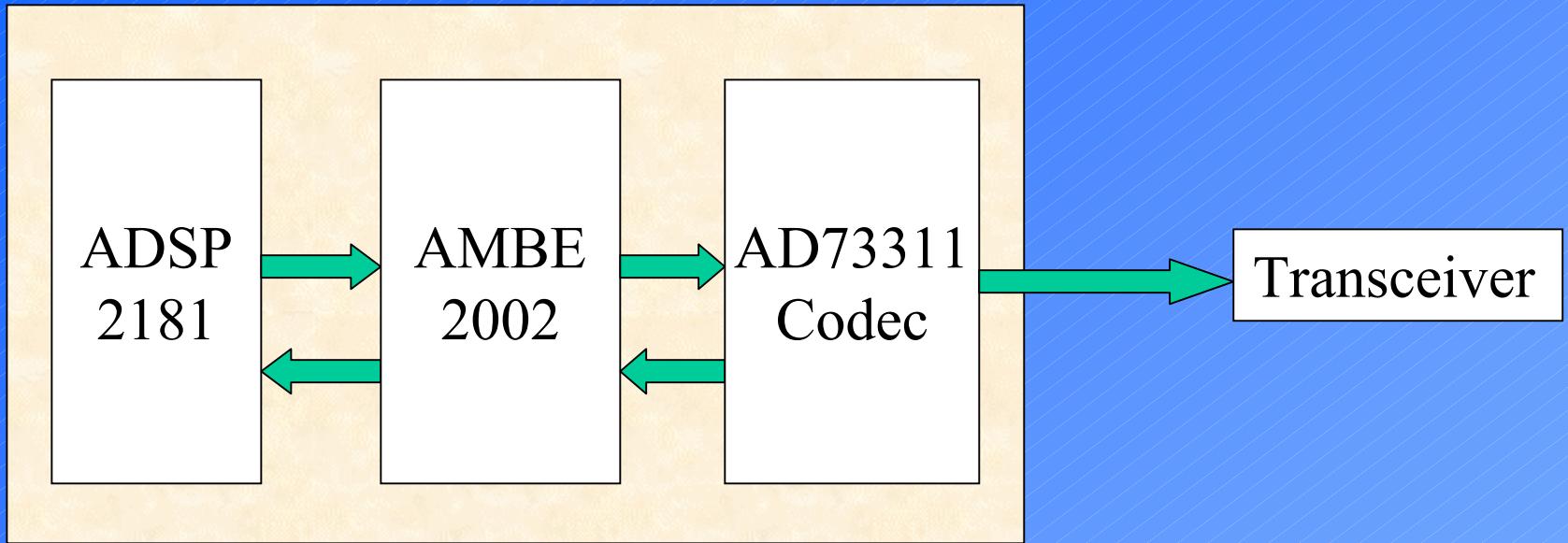
# My DV Development System



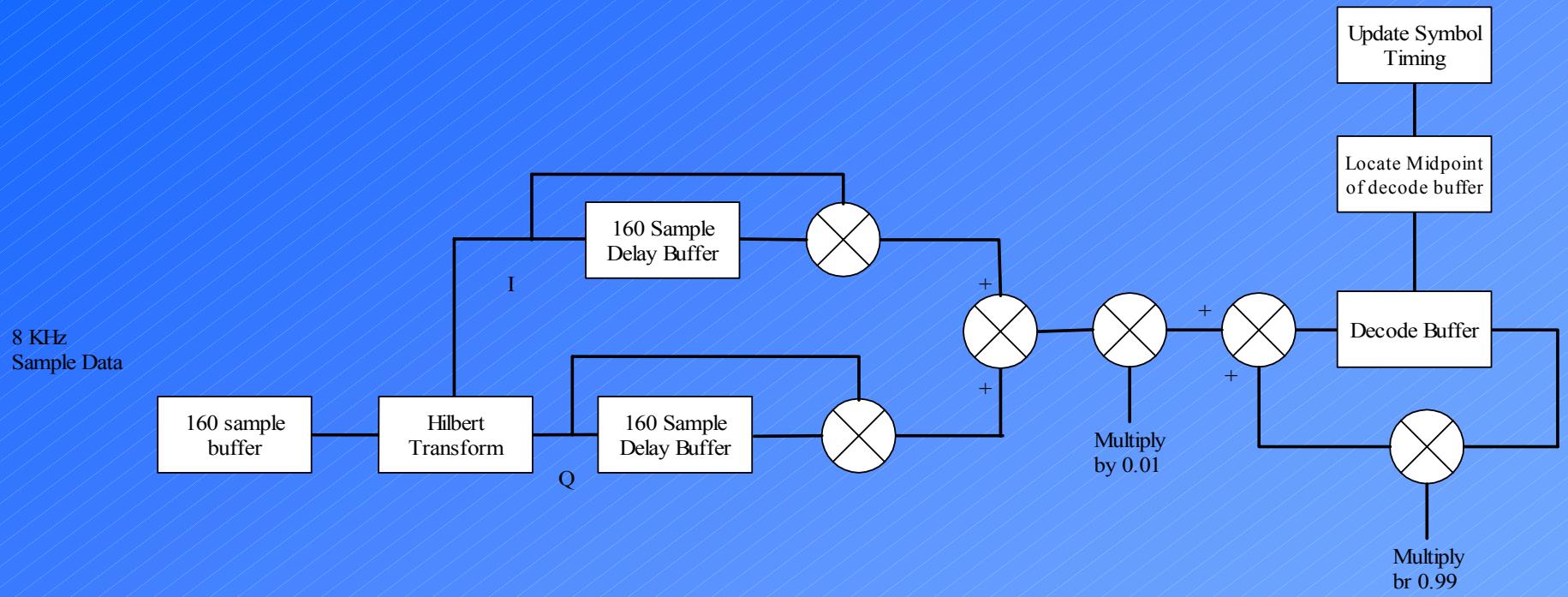




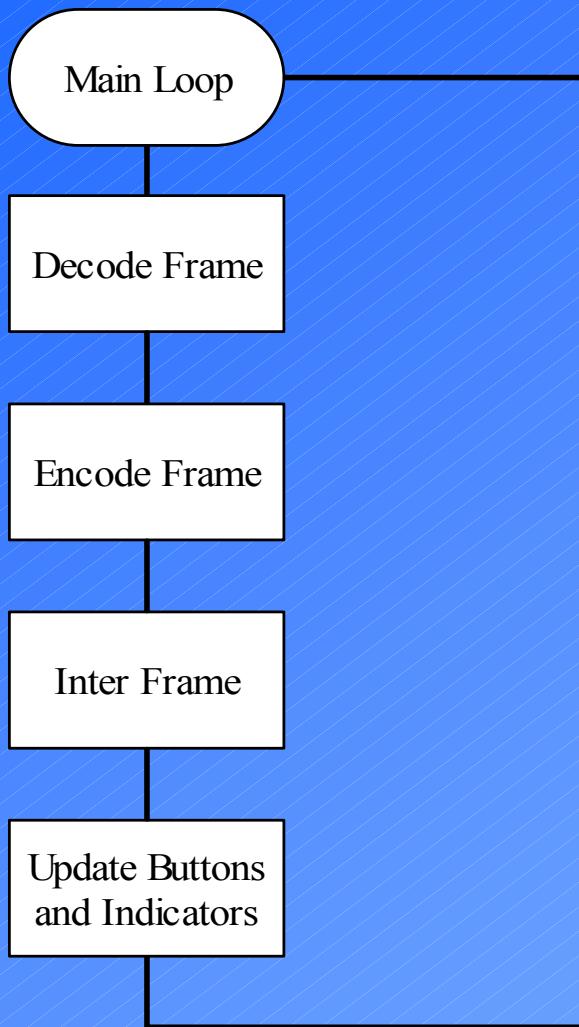
Digital Voice Modem based on  
ADI 21xx Processor



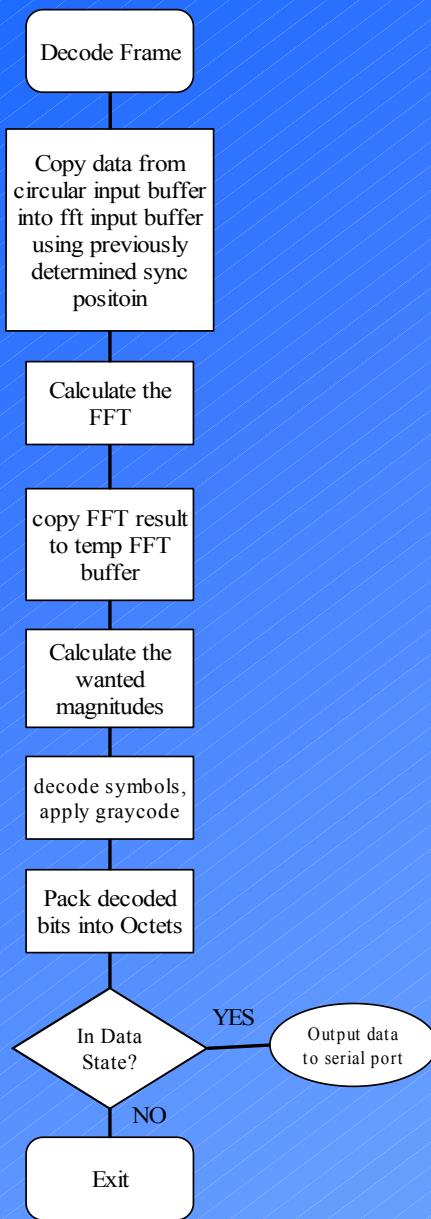
Digital Voice System based on  
ADI 21xx Processor



# Preamble and Symbol Timing Detection Diagram

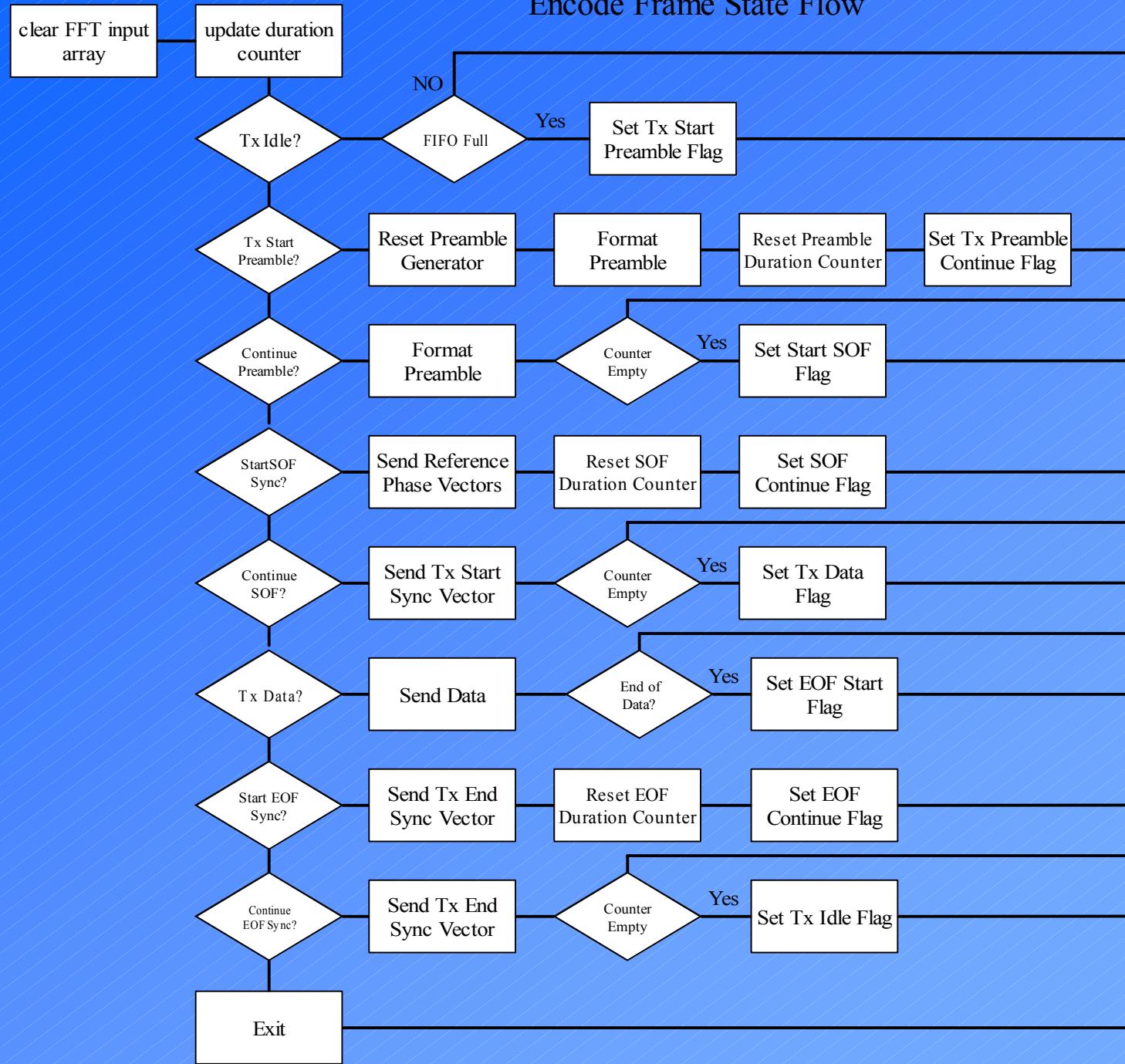


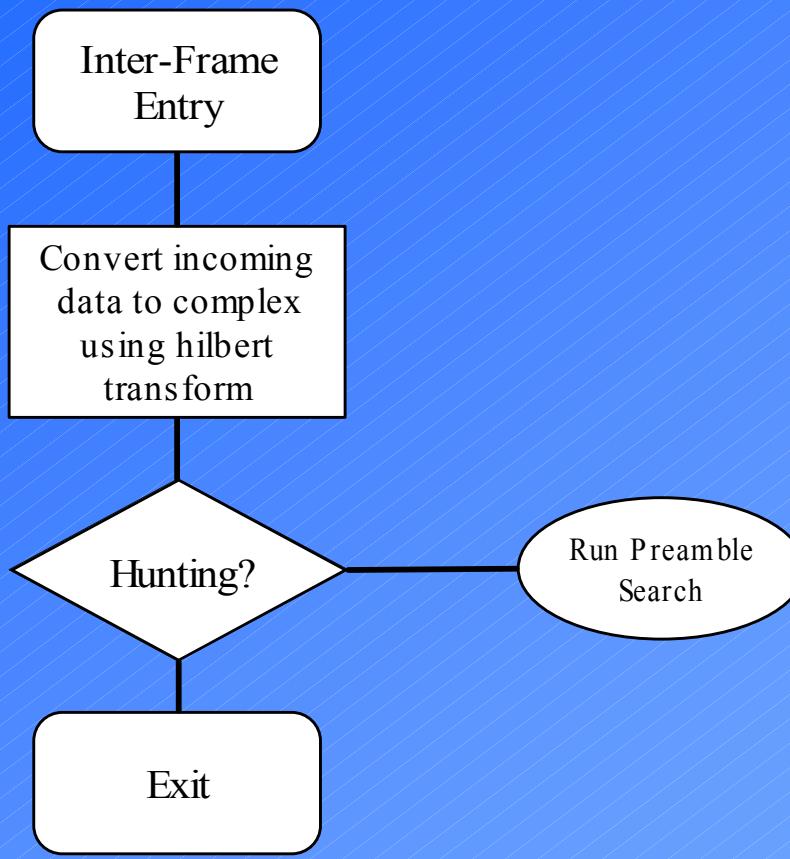
Main System Loop



Decode Frame

## Encode Frame State Flow





## INTER-FRAME PROCESSING